What a Waste!

Activity Rundown:

Think about what you might have thrown away in the past couple of days. Do you know where it is now? It might still be in your household garbage, but maybe it's already made its way to the city landfill. How long will it be there for? Was throwing the object in the trash the best option? In this activity, we'll be documenting and investigating the waste in our world and you'll be tasked with coming up with solutions to help reduce the toll trash takes on our world.

You will need:

- Notepad and writing utensil
- Some garbage and recycling

Let's do it!

1. First things first, we need to find some garbage! Take a few minutes to find some interesting items people might have recently thrown out in your household trash and/or recycling. Remember to be smart and safe about this step, we don't want to work with anything too gross or dangerous! Here's a table detailing some great examples of what to investigate and what's best left in the garbage:

Good!	Leave it!
• Recently discarded food • Broken toys • Old clothes • Empty food containers • Broken art supplies • Plastic cutlery • Empty water bottles • Unused toiletries	• Moldy and smelly food • Sharp objects • Used bandaids • Broken objects with sharp or jagged edges • Anything filled with liquids • Anything your parents or guardians tell you to leave!

2. Once you have 3-5 objects you want to investigate, lay them on the ground. Depending on what objects you have chosen, you may want to move this activity outside.
3. Your first challenge is to lay them in order of which objects you think will last on the earth longer than others. For example, if you have a plastic water bottle and a recently discarded banana peel, which will decompose faster if buried under the

ground? To need help with this step, make sure to read over the background section of this activity!

4. Once you have finished laying them out in order, do some research if you were correct. Why do you think some items will decompose slower than others?
5. Next, we're going to do a bit of brainstorming! Come up with at least one alternative use for each object. For example, your uses could be as simple as converting the banana peel into compost or cutting up the plastic bottle to be used as plastic rope. Be as creative as you can!
6. Finally, see if you can actually make any of your alternatives a reality! We're going to be focusing on the three R's: **Reduce, Recycle, and Reuse**. For example, bury the banana peel in your garden to create compost or get an adult to help you cut up your plastic bottle into a rope. Don't forget to take pictures of your fantastic alternatives to what would have been trash!

Background:

- Canadians generate approximately 31 million tonnes of garbage a year (and only recycle about 30 percent of that material).
- Each Canadian generates approximately 2.7 kg of garbage each day. That's a lot of garbage! (from https://www.crcresearch.org/solutions-agenda/waste)
- **Decomposition** is the process in which an object decays over time. Man made materials such as plastics take much longer to decompose as compared to organic materials like food.
- **Degradation** is the process by which chemicals are used to help break down materials.
- **Biodegradable** items can be broken down by microorganisms (bateria, fungi, worms, etc.)
- Unlike organic waste, the waste humans produce (like plastics, styrofoam, etc.) is much more difficult to break down and we cannot rely on decomposers (like worms) to break it down. This causes waste to build up, and since we need to put it somewhere it usually ends up in landfills. If waste doesn't go into a landfill it can be harmful to animals and environments. For example, 6-pack plastic rings used to keep cans together can be a choking hazard for birds.
- **Recycling** is the process in which waste is changed into new products.
- **Reusing** is utilizing an item that has performed its function and uses it again for another or similar function.
- **Reducing** is using less of an item to produce less waste in society.

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DECOMPOSITION TIMELINE :

Loose leaf paper/paper towel	2 - 4 weeks
Toilet Paper	2 - 4 weeks
Banana peel	2 - 5 weeks
Newspaper/Magazines	6 weeks
Cardboard Box	2 Months
Apple Core	3 months
Waxed Milk Carton	3 months
Cotton Clothing	1 – 6 months
Orange Peel	3 – 6 months
Matches	6 months
Natural Fiber Rope	3 – 14 months
Leaves	1 – 2 years (composting on their own)
Plywood- mixed wood	1 – 3 years
Biodegradable diaper (BIO)	1 – 3 years
Wool socks/glove	1 - 5 years
Standard Paper plate	5 years
Pencil	13 years
Painted Wood (coloured popsicle stick)	13 years
Plastic garbage bags	10 – 20 years

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Plastic film canister	20 – 30 years
Nylon Fabric	30 – 40 years
Foamed Plastic Cups (Styrofoam cups)	50 years
Rubber boot sole	50 - 80 years
Styrofoam buoy (ball)	80 years
Tin Can	50 - 100 years
Battery (outer shell, not chemicals)	100 years
Aluminum Cans	200 to 500 years
Disposable Diapers	450 years
Band-Aids	450 years
Can Holder (6 ring plastic)	450 years
Plastic Bottle – recyclable	450 years
Fishing nets/fishing line	600 years
Glass jar	over 1,000,000 years

Note that plastic and styrofoam don't decompose, they degrade into microscopic (teeny tiny) particles. Similarly metal doesn't decompose, it oxidizes (rusts).

Check out these awesome Youtube videos showing communities taking what would have been trash and creatively reusing them to make something completely different!

the Landfill Harmonic Orchestra and Building house out of plastic bottles and rubbish

Reach out!

We would love to hear from you about all the amazing STEM projects you are doing at home! Show us your finished products on any of the following social media platforms by tagging us or by using the following hashtags. We hope these projects have brought some excitement to your day during these difficult times.

Let us know how we did! Please click here to fill out a short survey on how well we did and what you would like to see more of in the future. Thank you!

Twitter: **@MyMindsInMotion**
Facebook: **@mindsinmotion2014 & @ucactiveliving**
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Please use the following hashtags!
#ucalgarycamps #ucalgarytogether